Mr. Baxendell has as usual favoured me with the maxima of the stars bearing his initial. The minima of the Short Period Variable Stars shall follow by the next mail.

One star, S *Sagittarii*, was discovered at Dr. Lee's Observatory shortly before my departure from England, and has been re-observed here this year. Time forbids further details in this letter.

Madras Observatory, 1861, *Dec.* 28.

On the Stars R *Vulpeculæ and* U *Geminorum, and on an Appearance in Venus.* By G. Knott, Esq.

R *Vulpeculæ.* A few months ago I had the honour of submitting to the Astronomical Society a short paper on an unexpected *minimum* of this star; further observation enables me to report a *maximum*, mag. = 8·7, on or about the 31st December last. It will be seen that this result does not accord with the predictions of Mr. Pogson's valuable Ephemeris; by reference, however, to a paper by Dr. Winnecke, in No. 1224 of the *Astronomische Nachrichten*, it appears that the period is subject to considerable irregularity, for while two observed maxima in 1859 gave a period of 129 days, one of 147·35 days was found more satisfactorily to represent the earlier observations, including two by Piazzi in the beginning of the century. It would be premature on my part to say anything decidedly on this point, I will merely add that my own light-curve seems to favour the shorter period.

U *Geminorum.* This remarkable star was due at maximum on Jan. 21; my own observations show that the maximum actually occurred nineteen or twenty days earlier. On turning my Equatoreal to the spot on the evening of Jan. 3d, I found the star of the 9·4 mag., by the next evening it had fallen to 9·6, and on the 11th of the same month it shone as a star of the 11·2 mag. Bad weather and bright moonlight prevented further observation. Unfortunately the maximum was passed before my observations commenced, but we may probably assume the 1st or 2d of January as the date of its occurrence.

Readers of the *Monthly Notices* will remember an interesting paper by Mr. Pogson (*Monthly Notices*, vol. xx., p. 37) containing an account of a series of observations of this star by M. Goldschmidt in November 1859, from which, in combination with one of his own, he deduced a maximum on Nov. 12th, "full 27 days before the time indicated by computation." Starting from this date, and applying Mr. Pogson's period of 96·879 days, I find a maximum due on Dec. 25th, 1861, a result, which, compared with my own observations, seems to

B

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1862MNRAS..22..158B

show that, in the interval, the period has not been subject to any startling irregularity.

I take the opportunity of mentioning a recent observation of that curious phenomenon connected with the planet *Venus*, sometimes called the *phosphorescence of the dark side.* On the evening of Jan. 14th, my uncle, Mr. Berry of Liverpool, was examining the planet with a small but very perfect Gregorian reflector of 4 inches aperture, mag. power 160. The wind was high, but the atmosphere very clear, and in repeated intervals of quiet, when the cusps were sharply defined, the unillumined part of the disk shone with a faint light similar in appearance to the *lumière cendrée* in the crescent Moon. In proof of the independence of the observation I may say, that, at the time, it had entirely escaped Mr. Berry's memory that the phenomenon had been remarked by previous observers.

Woodcroft, Cuckfield, March 10th, 1862.

Orbit of ξ Ursæ Majoris, determined from the Observations made between 1819·10 *and* 1860·08. By J. Breen, Esq.

Perihelion	1816·32
Period	63·14 years.
Excentricity	0·3929
Major semiaxis	2″·454
	° ′
Perihelion from node	132 53
Node	97 18
Inclination	52 16

Comparison of Observed and Calculated Places.

Date.	Angle of Position. [O — C]	Distance. [O — C]	Observer.
	° ′	″	
1819·10	+1 4	(+0·991)	Struve
1826·20	+2 28	+0·007	,,
1831·08	−2 7	+0·157	Bessel
1835·41	+3 11	−0·112	Struve
1840·40	+1 36	+0·055	,,
1843·48	−1 5	+0·235	Bessel
1848·32	−0 19	+0·028	J. Breen
1852·20	+1 18	−0·074	Fletcher
1857·40	+1 14	−0·081	,,
1860·08	+0 58	−0·168	Lord Wrottesley.

Compared with the observations of Sir W. Herschel of 1781·97, and the single measurements of 1802·09 and 1804·08, the calculated angles of position are respectively 5° 42′, 5° 17′, and 6° 21′ in defect.

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